

Darwin Core (DwC)

This document was created in the context of the ASCH project¹. It analysis the applicability of Darwin Core according to the requirements defined by the ASCH project.

Darwin Core is a metadata standard published by the Taxonomic Databases Working Group (TDWG)² and developed to support sharing of information about biological diversity. It is used to describe taxon, their occurrence, specimens, samples, and related information.³ Originally a standard for the exchange of metadata via Z39.50 it was enhanced as a syntax-independent standard that may be used with text, XML and RDF. The standard is based on the DCMI standards and extended by DwC terms used for biodiversity information. The set of Darwin Core terms can be used with terms from other metadata standards (e.g. FOAF). Next to the detailed description how to implement the standard using text⁴, XML⁵ or RDF⁶, the TDWG provides mappings to concepts of the Access to Biological Collections Data Standard (ABCD)⁷.

This analysis is based on the “Darwin Core Terms: A quick reference guide”⁸. Some of the examples are taken from <http://rs.tdwg.org/dwc/terms/guides/rdf/index.htm> and <http://rs.tdwg.org/dwc/terms/guides/xml/index.htm>.

¹ <http://asch.wiki.gwdg.de/index.php/asch>About>

² <http://www.tdwg.org/about-tdwg/>

³ <http://rs.tdwg.org/dwc/index.htm>

⁴ <http://rs.tdwg.org/dwc/terms/guides/text/index.htm>

⁵ <http://rs.tdwg.org/dwc/terms/guides/xml/index.htm>

⁶ <http://rs.tdwg.org/dwc/terms/guides/rdf/index.htm>

⁷ <http://rs.tdwg.org/dwc/terms/history/dwctoabcd/index.htm>

⁸ <http://rs.tdwg.org/dwc/terms/index.htm>





Resource	Superclass of all classes used in the model	Entity				
[Requirement 6]	Resources must be identified by identifiers that are unique, machine readable and persistent.			DwC provides elements for the use of identifiers for all resources described by DwC (collectionID, eventID, locationID, geologicalContextID etc.).		✓
[Requirement 7]	Resources must be identified by a name/appellation that allows to distinguish between resources of the same type	Property		DwC provides elements for the identification of resources by name/appellation for all resources described by DwC (e.g. organismName, datasetName, scientificName, etc.)		✓
[Requirement 8]	The nature of a resource must be described using 1-n controlled values.	Property	rdf:type		<rdf:Description rdf:about="http://bioimages.vanderbilt.edu/kirchoff/ac1490"> <rdf:type	✓
[Requirement 9]	Resources can be interlinked with 0-n other resources.	Occurrence		Constraints are not provided in the terms definitions and all properties are repeatable.	rdf:resource="http://purl.org/dc/dcmitype/StillImage"/><dc:creator	✓
[Requirement 10]	Resources must be interlinked with each other using unique, machine readable and persistent identifiers.	Values		DwC provides elements for the use of identifiers for all resources described by DwC (collectionID, eventID, locationID, geologicalContextID etc.).	rdf:resource="http://bioimages.vanderbilt.edu/contact/kirchoff#coblea"/></rdf:Description>	✓
[Requirement 11]	The nature of the relation between two resources can be specified using controlled values.	Property	rdf:type	rdf:type is used with non-literal values that are instances of the class rdfs:Class.		✓
[Requirement 12]	The relation between two resources can be specified by the time this relation was valid.	Property				✗

[Requirement 71]	Topics of information resources must be described using controlled values	Property		Out of scope.			X
[Requirement 72]	Resources used as access points must be identified as instances of one or more classes.	Property	taxonID	http://rs.tdwg.org/dwc/terms/taxonID	An identifier for the set of taxon information (data associated with the Taxon class).	<rdf:Description rdf:about="http://guid.mvz.org/identifications/23459"><dwc:taxonID> http://lsid.tdwg.org/urn:lsid:catalogueoflife.org:taxon:d79c11aa-29c1-102b-9a4a-00304854f820:col20120721 </dwc:taxonID></rdf:Description>	✓
Metadata Set	The machine readable description of a single resource by statements.	Entity	dwr:DarwinRecordSet				
[Requirement 1]	Resource descriptions must be machine readable.			DwC supports a machine readable structured description of resources in TEXT, XML and RDF (see http://rs.tdwg.org/dwc/index.htm).			✓
[Requirement 2]	Resource descriptions must be compliant to the one-to-one principle			DwC provides different Classes to differentiate between different resources (e.g. dwc:Event, dwc:Organism, dcterms:Location)			✓
[Requirement 3]	A resource description must provide all attributes necessary to identify the resource and distinguish it from other resources of the same type.	Property		DwC provides a wide range of terms sufficient for the identification and differentiation of resources			✓
[Requirement 4]	Resource descriptions must be identified by identifiers that are unique, machine readable and persistent.		datasetID	http://rs.tdwg.org/dwc/terms/datasetID	An identifier for the set of data.	<dwc:datasetID> http://d-nb.info/gnd/118624792 </dwc:datasetID>	✓
[Requirement 5a]	Creation of resource descriptions must be documented by time	Property					X

	stamps.						
[Requirement 5b]	Modification of resource descriptions must be documented by time stamps.	Property	modified	http://purl.org/dc/terms/modified	Date on which the resource was changed.	<dcterms:modified>2009-02-12T12:43:31</dcterms:modified>	✓
[Requirement 63]	Resource descriptions must include information about the reusability of these descriptions (e.g. license information)	Property	license	http://purl.org/dc/terms/license	A legal document giving official permission to do something with the resource.	<dcterms:license> http://creativecommons.org/publicdomain/zero/1.0/ </dcterms:license>	✓
[Requirement 64]	Resource descriptions must be compliant to a cross-domain or domain-specific metadata standard.			DwC is a domain specific standard used for the description of taxa.			✓
[Requirement 65]	Resource descriptions must refer to the used metadata standard(s)	Property		An machine readable RDF schema is available and may be referred to.			✓
Item	A real world thing in a collection	Entity	Occurrence	http://rs.tdwg.org/dwc/terms/Occurrence	An existence of an Organism at a particular place at a particular time.		✓
[Requirement 13]	Item descriptions can be interlinked with evidence.	Property	ResourceRelationship	http://rs.tdwg.org/dwc/terms/ResourceRelationship	A relationship of one rdfs:Resource to another.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEvidenceRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myOccurrence</dwc:resourceID><dwc:relatedResourceID> http://telota.bbaw.de/AvHBriefedition/#/1/ </dwc:relatedResourceID></dwc:ResourceRelationship>	✓
[Requirement 20]	Item descriptions must be interlinked with 1-n events in the lifecycle of the	Property	ResourceRelat	http://rs.tdwg.org/dwc/terms/ResourceRelationship	A relationship of one	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:	✓

	item.		ionship	ms/ResourceRelationship	<p>rdfs:Resource to another.</p> <p>There may be 0-n ResourceRelationships between two resources.</p>	<p>myEventRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myOccurrence</dwc:resourceID><dwc:relatedResourceID>ex:myEvent</dwc:relatedResourceID></dwc:ResourceRelationship></p>	
[Requirement 75]	Items must be identified by identifiers that are unique, machine readable and persistent.	Property	occurrenceID	http://rs.tdwg.org/dwc/terms/occurrenceID	An identifier for the Occurrence (as opposed to a particular digital record of the occurrence).	<dwc:occurrenceID>urn:catalog:AUDCLO:EBIRD:OBS64515288</dwc:occurrenceID>	✓
[Requirement 76]	Items must be identified by a name or appellation.	Property					✗
[Requirement 42]	For items a digital representation/copy can be available.	Property	ResourceRelationship	http://rs.tdwg.org/dwc/terms/ResourceRelationship	A relationship of one rdfs:Resource to another.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEvidenceRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myOccurrence</dwc:resourceID><dwc:relatedResourceID>ex:myWebResource</dwc:relatedResourceID></dwc:ResourceRelationship>	✓
[Requirement 44]	Items can be represented by digital representations in different resolutions.	Property	ResourceRelationship	http://rs.tdwg.org/dwc/terms/ResourceRelationship	<p>A relationship of one rdfs:Resource to another.</p> <p>There may be 0-n ResourceRelationships between two resources.</p>	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEventRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myOccurrence</dwc:resourceID><dwc:relatedResourceID>ex:mWebResource</dwc:relatedResourceID></dwc:Res	✓

						sourceRelationship>	
[Requirement 51]	Item descriptions must be assigned to 1-n collections.	Property	inCollection	dwciri:inCollection	Use to link any subject resource that is part of a collection to the collection containing the resource.	<rdf:Description rdf:about="http://arctos.datab ase.museum/guid/MVZ:Mamm :115956"><dwciri:inCollection rdf:resource="http://biocol.org /urn:lsid:biocol.org:col:34904"/ ></rdf:Description>	✓
[Requirement 52]	All items of a collection must be interlinked with the collection using unique, machine readable and persistent identifiers.		rdf:about rdf:resource	Both may be identified by unique identifiers using rdf:about and rdf:resource.			✓
[Requirement 77]	Item descriptions must interlink with information about the current location of the item.	Property	institutionCode	http://rs.tdwg.org/dwc/terms/institutionCode	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	<dwc:institutionCode>MVZ</dwc:institutionCode>	✓
[Requirement 59]	Item descriptions must provide machine readable information about the accessibility and usability of items.	Property	accessRights	http://purl.org/dc/terms/accessRights	Information about who can access the resource or an indication of its security status. Access Rights may include information regarding access or restrictions based on privacy, security, or other policies.	<dcterms:accessRights>Items of this project can only be read and used by members of myProject</dcterms:accessRights>	✓
Evidence	A resource proving the reliability of a statement about a resource.	Entity					X
[Requirement 15]	Evidences can be machine readable.						X
[Requirement 16]	The nature of an evidence must be described by 1-n controlled values	Property					X

[Requirement 17]	Information about resources in an evidence must be identified by unique identifiers.	Property					X
[Requirement 18]	Information about the nature of a resource in an evidence must be identified by 1-n controlled values.	Property					X
[Requirement 78]	Evidence descriptions must provide information about the accessibility and reusability of the resource.	Property					X
Event	An activity in the lifecycle of a resource	Entity	Event	http://rs.tdwg.org/dwc/terms/Event	An action that occurs at some location during some time.		
[Requirement 79]	Event descriptions can be interlinked with evidence about the event (e.g. documents)	Property	ResourceRelationship	http://rs.tdwg.org/dwc/terms/ResourceRelationship	A relationship of one rdfs:Resource to another.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEvidenceRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myEvent</dwc:resourceID><dwc:relatedResourceID> http://telota.bbaw.de/AvHBriefedition/#/1 </dwc:relatedResourceID></dwc:ResourceRelationship>	
[Requirement 21]	Event descriptions must be machine readable.			DwC supports a machine readable structured description of resources in RDF.			
[Requirement 22]	Event descriptions must show the nature of the relation between items, agents, places and/or time.	Property		The relation between item, places and time can be described using dcw:Event, a relation between dcw:Event and an agent can only be described using dwc:ResourceRelationship.			

[Requirement 23]	An event in the lifecycle must be related to 1-n items.	Property	ResourceRelationship	http://rs.tdwg.org/dwc/terms/ResourceRelationship	A relationship of one <code>rdfs:Resource</code> to another. There may be 0-n <code>ResourceRelationships</code> between two resources.	<code><dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEventRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myEvent</dwc:resourceID><dwc:relatedResourceID>ex:myOccurrence</dwc:relatedResourceID></dwc:ResourceRelationship></code>	✓
[Requirement 24]	An event in the lifecycle of an item must be related to 0-n agents	Property	ResourceRelationship	http://rs.tdwg.org/dwc/terms/ResourceRelationship	A relationship of one <code>rdfs:Resource</code> to another. There may be 0-n <code>ResourceRelationships</code> between two resources.	<code><dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEventRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myEvent</dwc:resourceID></code>	✓
[Requirement 25]	The function/role of an agent during an event must be specified using controlled values (e.g. creator, dealer, collector).	Property	relationshipOfResource	http://rs.tdwg.org/dwc/terms/relationshipOfResource	The relationship of the resource identified by <code>relatedResourceID</code> to the subject (optionally identified by the <code>resourceID</code>). Recommended best practice is to use a controlled vocabulary.	<code><dwc:relatedResourceID>ex:myOccurrence</dwc:relatedResourceID><dwc:relationshipOfResource>http://id.loc.gov/vocabulary/relators/tch</dwc:relationshipOfResource></dwc:ResourceRelationship></code>	✓
[Requirement 26]	An event in the lifecycle of an item must be related to 0-n places.	Property	habitat	http://rs.tdwg.org/dwc/terms/habitat	category or description of the habitat in which the Event occurred.	<code><dwc:habitat>http://vocab.getty.edu/tgn/7005246</dwc:habitat></code>	✓
[Requirement 27]	An event in the lifecycle of an item must be related to 0-n date information.	Property		DwC provides a set of elements for the description of date and time information.			✓
Time	A time span related to a resource via an activity or as a topic	Entity					✗

[Requirement 29]	Date and time indication must be machine readable.	Property		DwC provides a set of elements for the description of well - structured and machine readable date and time information (e.g. eventDate, eventTime, day, month, year).			✓
[Requirement 30]	Date information must be compliant to date type standards.	Datatype		The standard recommends the use of ISO 8601:2004(E).			✓
[Requirement 80]	A human readable form of date information can only be used in addition to a machine readable form.	Value	verbatimEventDate	http://rs.tdwg.org/dwc/terms/verbatimEventDate	The verbatim original representation of the date and time information for an Event.	<dwc:verbatimEventDate>spring 1910</dwc:verbatimEventDate>	✓
[Requirement 81]	A human readable form of date information can use values of a controlled vocabulary.	value	verbatimEventDate	http://rs.tdwg.org/dwc/terms/verbatimEventDate	The verbatim original representation of the date and time information for an Event.	<dwc:verbatimEventDate> http://id.loc.gov/authorities/subjects/sh85048142 </dwc:verbatimEventDate>	✓
Agent	A person, organization or group related to a resource via an activity or as a topic.	Entity					
[Requirement 32]	Agents must be identified by name and biographical information.	Property		Properties relating to agents may be used with literal or non-literal values.		<dwc:recordedBy>Lieschen Müller, 1730-1825</dwc:recordedBy>	✓
[Requirement 33]	Agents must be identified by identifiers that are unique, machine readable and persistent.	Property		Properties relating to agents may be used with literal or non-literal values.		<dcw:recordedBy> http://d-nb.info/gnd/131724126 </dcw:recordedBy>	✓
[Requirement 34]	Agent descriptions can interlink with resources related to the agent.	Property					✗
[Requirement 35]	Agent descriptions must be machine readable.						✗

[Requirement 36]	Agent descriptions can interlink with places related to the agent.	Property					X
[Requirement 37]	The relation between an agent and a place can be specified by the character of the relation (e.g. visitor or resident)	Property					X
[Requirement 38]	The relation between an agent and a place can be specified by the time this relation was valid.	Property					X
Place	A geographic location related to a resource via an activity or topic.	Entity	Location	http://purl.org/dc/terms/Location	A spatial region or named place.		✓
[Requirement 39]	Places must be identified by identifiers that are unique, machine readable and persistent.	Property	locationID	http://rs.tdwg.org/dwc/terms/locationID	An identifier for the set of location information	<dwc:locationID> http://vocab.Getty.edu/tgn/7005246 </dwc:locationID>	✓
[Requirement 40]	Places must be identified by machine readable geo-information / geographic coordinates	Datatype		DwC provides a set of elements for the description of geo information.			✓
[Requirement 41]	Place descriptions can include 1-n place appellations.	Property		DwC provides a set of elements for the identification of places by appellations.		<dwc:municipality>Sankt-Petersburg</dwc:municipality>	✓
Digital Representation	A digital resource depicting an item	Entity	WebResource				X
[Requirement 43]	A digital representation/copy must enable the identification of the item it represents.		ResourceRelationship	http://rs.tdwg.org/dwc/terms/ResourceRelationship	A relationship of one rdfs:Resource to another. There may be 0-n ResourceRelationships	<dwc:ResourceRelationship><dwc:resourceRelationshipID>exampleRelationship</dwc:resourceRelationshipID><dwc:resourceID>	✓

					between two resources.	D> https://www.deutsche-digitale-bibliothek.de/item/643636MWZFSNNQLRRXUM457URH5VNQ43 </dwc:resourceID><dwc:relatedResourceID> http://www.tierstimmenarchiv.de/webinterface/contents/showdetails.php?autologin=false&unique_id=TSA:Amblonyx_cinereus_DIG_34_1_1&edit=-1 </dwc:relatedResourceID></dwc:ResourceRelationship>	
[Requirement 45]	The nature of a digital representation must be described using a controlled value.	Property	type	http://purl.org/dc/terms/type	The nature or genre of the resource.	<dcterms:type> http://purl.org/dc/dcmitype/Image </dcterms:type>	✓
[Requirement 60]	Descriptions of digital representations must provide information about the reusability of the digital representation (e.g. license).	Property	license	http://purl.org/dc/terms/license	A legal document giving official permission to do something with the resource.	<dcterms:license> http://creativecommons.org/publicdomain/zero/1.0/ </dcterms:license>	✓
[Requirement 61]	Descriptions of a digital representation must provide contact information related to the usability of a digital copy.	Property	rightsHolder	http://purl.org/dc/terms/rightsHolder	A person or organization owning or managing rights over the resource.	<dcterms:rightsHolder> http://l.d.zdb-services.de/resource/organizations/DE-MUS-069727 </dcterms:rightsHolder>	✓
[Requirement 82]	Digital representations must be identified by identifiers that are unique, machine readable and	Property	rdf:type			<rdf:type>urn:nbn:de:bsz:105-db-id4104242509</rdf:type>	✓

	persistent.						
Collection	An aggregation of items:	Entity					X
[Requirement 46]	Collection descriptions must be machine readable.			Out of scope.			X
[Requirement 47]	Collections must be identified by identifiers that are unique, machine readable and persistent.	Property	collectionID	http://rs.tdwg.org/dwc/terms/collectionID	An identifier for the collection or dataset from which the record was derived.	<dwc:collectionID>urn:lsid:biocol.org:col:34904</dwc:collectionID>	✓
[Requirement 48]	Collections must be identified by an explicit name.	Property	collectionCode	http://rs.tdwg.org/dwc/terms/collectionCode	The name, acronym, coden, or initialism identifying the collection or data set from which the record was derived.	<dwc:collectionCode>The Rincewind Gnom Collection</dwc:collectionCode>	✓
[Requirement 49]	Collection descriptions must include information about the location/place of the collection.	Property		Out of scope.			X
[Requirement 50]	Collection descriptions must be compliant to a cross-domain metadata standard.			Out of scope.			X
Statement	A predication about an item.	Entity					X
[Requirement 31]	A statement can be interlinked with date information.	Property	relationshipEstablishedDate	http://rs.tdwg.org/dwc/terms/relationshipEstablishedDate	The date-time on which the relationship between the two resources was established.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEvidenceRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myEvent</dwc:resourceID><dwc:relatedResourceID> http://telota.bbaw.de/Av	✓

						HBriefedition/#/1 </dwc:relatedResourceID><dwc:relationshipEstablishedDate>2014-12-24</dwc:relationshipEstablishedDate></dwc:ResourceRelationship>	
[Requirement 53]	All statements must be repeatable.	Property		Constraints are not provided in the terms definitions and all properties are repeatable.			✓
[Requirement 73]	Statements can be interlinked with information about their origin.	Property	relationshipAccordingTo	http://rs.tdwg.org/dwc/terms/relationshipAccordingTo	The source (person, organization, publication, reference) establishing the relationship between the two resources.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEvidenceRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myEvent</dwc:resourceID><dwc:relatedResourceID> http://telota.bbaw.de/AvHBriefedition/#/1 </dwc:relatedResourceID><dwc:relationshipAccordingTo> http://d-nb.info/gnd/131724126 </dwc:relationshipAccordingTo></dwc:ResourceRelationship>	✓
[Requirement 74]	Statements can be interlinked with resources.	Property	relationshipAccordingTo	http://rs.tdwg.org/dwc/terms/relationshipAccordingTo	The source (person, organization, publication, reference) establishing the relationship between the two resources.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myEvidenceRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myEvent</dwc:resourceID><dwc:relatedResourceID> http://telota.bbaw.de/AvHBriefedition/#/1 </dwc:relatedResourceID><dwc:relationshipAccordingTo>ex:myBook</dwc:relationshipAccordingTo></dwc:	✓

						ResourceRelationship>	
[Requirement 54]	Statements can be interlinked with resources proving their reliability.	Property	relationshipAccordingTo	http://rs.tdwg.org/dwc/terms/relationshipAccordingTo	The source (person, organization, publication, reference) establishing the relationship between the two resources.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myEvent</dwc:resourceID><dwc:relatedResourceID> http://dnb.info/gnd/131724126 </dwc:relatedResourceID><dwc:relationshipAccordingTo>ex:myLetter</dwc:relationshipAccordingTo></dwc:ResourceRelationship>	✓
[Requirement 55]	Inconsistency of statements is allowed if the metadata refers to the origin of the statements.	Validation		There may be 0-n ResourceRelationships between two resources.			✓
[Requirement 86]	A statement can related to 0-n places.	Property	relationshipRemarks	http://rs.tdwg.org/dwc/terms/relationshipRemarks	Comments or notes about the relationship between the two resources.	<dwc:ResourceRelationship><dwc:resourceRelationshipID>ex:myRelationship</dwc:resourceRelationshipID><dwc:resourceID>ex:myResource</dwc:resourceID><dwc:relatedResourceID>ex:myResource</dwc:relatedResourceID><dwc:relationshipRemarks>valid only in the Western Sahara</dwc:relationshipRemarks></dwc:ResourceRelationship>	(✓)
Holding	The place an item is located,	Entity	Location	http://purl.org/dc/terms/L	A spatial region or named		✓

	subclass of place			ocation	place.		
[Requirement 83]	Holdings must be identified by identifiers that are unique, machine readable and persistent	Property	locationID	http://rs.tdwg.org/dwc/terms/locationID	An identifier for the set of location information	<dwc:locationID> http://ld.zdb-services.de/resource/organisations/DE-MUS-069727 </dwc:locationID>	✓
[Requirement 84]	Holdings can be identified by machine readable geo-information / geographic coordinates.	Property		DwC provides a set of elements for the description of geo information.			✓
[Requirement 85]	Holding descriptions must include 1-n place appellations.	Property		Out of scope.			X
[Requirement 58]	Holding descriptions must provide contact information.	Property		Out of scope.			X
Concept	A term from a controlled vocabulary	Entity	Taxon	http://rs.tdwg.org/dwc/terms/Taxon	A group of organisms (sensu http://purl.obolibrary.org/obo/OBI_0100026) considered by taxonomists to form a homogeneous unit.		✓
[Requirement 66]	Controlled values used for the description of resources must be values of a domain-specific or a cross-domain standard.	Value	nameAccordingToID	http://rs.tdwg.org/dwc/terms/nameAccordingToID	An identifier for the source in which the specific taxon concept circumscription is defined or implied.	<dwc:nameAccordingToID> http://purl.obolibrary.org/obo/obi.owl </dwc:nameAccordingToID>	✓
[Requirement 67]	Controlled values used for the description of resources must be identified by identifiers that are unique, machine readable and	Property	taxonID	http://rs.tdwg.org/dwc/terms/taxonID	An identifier for the set of taxon information (data associated with the Taxon class).	<dwc:taxonID> http://purl.obolibrary.org/obo/OBI_0100026 </dwc:taxonID>	✓

	persistent.					
[Requirement 68]	The used controlled vocabularies must be available in machine readable form.	Value		DwC provides a set of elements to describe terms.		✓
[Requirement 69]	The used controlled vocabularies must be available open access.	Value		Out of scope.		
[Requirement 70]	Synonym appellations must be merged using authorities.	Property		DwC provides a set of elements for the identification of an item by appellations (e.g. scientificName, originalNameUsage, vernacularName, etc.).	<dwc:scientificName>Beta vulgaris</dwc:scientificName><dwc:vernacularName>Runkelrübe</dwc:vernacularName>	✓